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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,481	02/14/2004	Scott T. Weisgerber	GP-304122	5535

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Leslie Hodges
General Motors Corporation, Legal Staff
Mail Code: 482-C23-B21
P.O. Box 300
Detroit, MI 48265-3000

EXAMINER

PIGGUSH, AARON C

ART UNIT	PAPER NUMBER
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2838

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/779,481

Applicant(s)

WEISGERBER ET AL.

Examiner

Aaron Piggush

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The finality of the office action mailed June 2, 2006 has been withdrawn. Also, please note that a different examiner is now working on this case (Aaron Piggush in place of Robert Grant).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakai (US 5,786,640).

With respect to claim 1, Sakai discloses a method for diagnosing a critical state of charge condition of an energy storage system, comprising: obtaining power flow and state of charge for the energy storage system (col 3 ln 64 to col 4 ln 39 and Fig. 2-4 and 8); determining if the combination of power flow and state of charge meet predetermined criteria (col 4 ln 5-39 and col 5 ln 36-62); if the predetermined criteria are met, indicating a critical state of charge condition if the state of charge is outside of a predetermined region of state of charge for a predetermined duration (col 5 ln 24-62, col 8 ln 4 to col 9 ln 4, and Fig. 2-4 and 8).

Due to the vagueness of the claim language, the reference is reasonably seen to meet the subject matter. For instance, the indication of the critical state of charge condition does not need to be indicated by a light or alarm or directly sent to the owner/user, it just needs to be represented in some manner (i.e. causing the system to take action to remedy the problem).

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Also, the predetermined duration can consist of an instantaneous response (i.e. wherein the time is approximately zero seconds), which would be similar to the system responding as quickly as possible (wherein the predetermined duration is as long as it would take the system to sense that condition).

With respect to claims 2 and 3, Sakai discloses wherein the predetermined criteria are characterized by increasingly less tolerance for charge power flow at increasingly higher state of charge and increasingly less tolerance for discharge power flow at increasingly lower state of charge (Fig. 2 and 8, col 4 ln 5-26, and col 2 ln 26-34).

Allowable Subject Matter

4. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 4 recites a method for monitoring an energy storage system state of charge wherein the predetermined duration (in which the state of charge is outside of a predetermined region state of charge) is a function of the state of charge that generally decreases as the state of charge trends away from the predetermined region of state of charge and generally increases as the state of charge trends toward the predetermined region of state of charge.

5. Claims 5-9 are allowed. Please see the appeal brief filed August 17, 2006 (especially pages 15-18) and below.

Claim 5 recites a method for diagnosing a critical state of charge condition of an energy storage system, comprising: comparing the energy storage system power to the appropriate one of the charge and discharge thresholds after the state of charge enters one of the predetermined

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regions of high and low state of charge from an intermediate region, if the energy storage system power violates the appropriate one of the charge and discharge thresholds while the state of charge is within the one of the predetermined regions of high and low state of charge, monitoring the duration that the state of charge remains within one of the predetermined regions of high and low state of charge, and if the duration exceeds a predetermined duration, providing an indication of a critical state of charge condition.

Claim 7 recites a method for diagnosing a critical state of charge condition of an energy storage system, comprising: within a predefined extreme range of state of charge, providing a plurality of state of charge thresholds and a corresponding plurality of unique increment values, said increment values being larger the further away the corresponding state of charge threshold is from a predefined non-extreme range of state of charge, for so long as state of charge is outside of the predefined range of non-extreme state of charge comparing the state of charge to the state of charge thresholds and selecting one of said increments in accordance with the comparison, incrementing a counter with the selected increment, comparing the counter to a limit, and providing an indication of a critical state of charge condition if said counter exceeds said counter limit.

The prior art of record does not disclose the above limitations, nor would it be obvious to modify the art in such a manner.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wakashiro (US 6,166,517) discloses a control system for a hybrid vehicle that monitors the state of charge of a power storage unit.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Piggush whose telephone number is 571-272-5978. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP



KARL EASTHOM
SUPERVISORY PATENT EXAMINER